

ABSTRACT

A parametric loudspeaker that directly generates multiple high frequencies to indirectly create lower frequencies through the use of substantially monolithic, large area, film transducers that are generally larger than a wavelength of the carrier frequency in diameter or cross section. These large area film transducers include but are not limited to electrostatic, electret, and piezo film such as PVDF, electrothermal mechanical film, and planar magnetic configurations. Metal, foam, plastic or wood support structures or stators may be used to support the film transducers.

An alternative configuration of the loudspeaker may include a movable diaphragm stretched along the core member and displaced a short distance within a strong portion of a magnetic field. At least one, low mass, planar, conductive coil is disposed on the movable diaphragm and includes first and second contacts for enabling current flow through the coil to produce a first magnetic field to attract and repel the diaphragm at a desired frequency for development of a series of compression waves which may be adjusted to include an ultrasonic frequency range.